

Ground Covers

Introduction

On the surface of the earth we find a variety of plants that carpet the ground. Plants selected to serve this purpose in the landscape are called **ground covers**. This name refers to their use; it does not imply any scientific grouping nor does it limit such plants to a particular height.

The most widespread ground cover used by man is grass. No groundcover withstands wear like grass, however in many circumstances turf is neither desirable nor possible. Other ground covers provide an alternative, with additional benefits besides.

For purposes of this publication, the term ground cover will refer to non-turf plants.

Reasons for using ground covers

Practical reasons:

- To keep down weeds by serving as a living mulch
- To avoid the cost and maintenance of a lawn
- To facilitate care of a steep slope
- To prevent erosion
- To minimize maintenance

Aesthetic reasons:

- To tie together the elements of a landscape
- To soften discontinuities of landscape structures or plants
- To provide a setting for specimen plants, statuary, or structures
- To introduce texture, colorful foliage, bloom, and multi-seasonal interest

Environmental reasons:

- In nature's life cycle, plant parts degrade to form humus, which in turn releases nutrients to the soil. It is beneficial not to interfere with this process. Ordinarily, ground covers drop leaves which decay to improve the soil, but they also hide debris fallen from plants overhead which decay and add to the humus mill.

- A swath of ground cover around a plant base discourages foot traffic. This prevents the soil compaction that hinders oxygen and water penetration to roots.
- Ground covers keep the string trimmer and lawn mower at bay, thereby protecting tender bark.
- Ground cover roots penetrate the soil, constantly dying and renewing. This keeps the soil loose by maintaining porosity and organic content. Thus, tree and shrub roots benefit from better oxygen and water penetration as well as enhanced fertility.
- Consumption of gasoline by mowers and the resultant air pollution are avoided.

Selecting a ground cover

1. Consider these criteria:
 - Intended use of the ground cover
 - Site characteristics, i.e. water, root competition, etc.
 - Plant's drought tolerance
 - Plant's root system (deep or shallow, fibrous or sparse)
 - Plant's life span
 - Size of the area to be covered
 - Location of the area to be covered
 - Plant's rate of growth
 - Number of plants required
 - Cost

Usually more than one criteria must be taken into account at the same time. Some examples of interrelated criteria:

- When a large area is to be covered, then growth rate, number of plants and cost should all be considered.
- When there is a steep grade, then a substantial root system and rapid growth rate are important to stem erosion.
- When plants are to be located along a path, then height, vulnerability to foot traffic, and the rate of regeneration should all be considered.

2. Match a ground cover's cultural requirements to the site's characteristics.
Cultural requirements include:
 - Water
 - Drainage
 - Soil type
 - Soil pH
 - Light
 - Tolerance to allelopathy: Some trees, such as black walnut and English walnut, produce a chemical known as juglone which is toxic to many other plants. Some ground covers, for example astilbe species and *Galium odoratum*, show reasonable resistance to juglone toxicity.
3. Consult the Plant Criteria Table page 3 and the Gallery of Ground Covers page 6.

Planting and maintenance

When to plant:

In general, spring is the best time to plant due to its predictable moisture and long growing season. If good root growth is not established before the ground freezes, then mulching between plants becomes more necessary. When a plant is hardy to one zone colder than your zone, this provides some insurance that fall planting should be suitable.

Preparing the planting bed:

1. Kill or remove any pre-existing vegetation, especially perennial weeds. You can cover the site with a black plastic sheet for one to three months or use a nonspecific herbicide.
2. Till or spade the soil to a depth of 8 to 12 inches.
3. Incorporate lime according to plant requirements and a pH test when necessary.
4. Amend soil. For wide-spreading shrub ground covers, only the area in the vicinity of the root zone must be amended. However, the entire bed should be amended for plants that spread by above or below-ground horizontal stems that root at leaf nodes or for plants that are set very close together
5. Fertilize using 3-6 pounds of 5-10-5 per 100 square feet. A lower rate should be sufficient if the site has been fertilized in the past.
6. Rake smooth.
7. Cover bare soil with 1-2 inches of organic mulch.
8. Water and allow the soil to settle.

Planting:

- Dig planting holes at the recommended distance apart. Spacing is dependent on rate of growth and mature spread. This facilitates future maintenance.
- For multiple rows, align rows so that plants are staggered in zigzag fashion.
- Position plants at the same depth as they were in the container.
- Water plants thoroughly.
- Mulch exposed soil between plants.

Maintaining ground covers:

- Water: Deep watering is important for the first three months. (One inch a week.) This gets rid of air pockets created during planting and provides adequate time for root growth and establishment. After 3 months, water based on individual plant needs.
- Mulch: Maintain at 1 1/2 to 2 inches until plants cover the desired area.
- Prune: Spring flowering plants are pruned immediately after bloom. Summer and fall flowering plants are pruned in spring. Do not remove more than one third of the length of a the branch.
- Fertilize: Optional. Organic or slow release fertilizer may be applied once or twice yearly.
- Thin: When necessary, spring is the best time.
- Leaves from overhead plants: Allow them to decompose where they fall, unless they mat down or smother the groundcover.
- Wash: In polluted landscapes or during long periods between rains, dusty foliage may benefit from a fast stream of water.
- Diseases and pests: Avoid the need for disease and pest control. When there is a problem, correct deficiencies in the planting site or use a different type of ground cover.

Invasive and problematic ground covers

Over the years, some ground covers have proven to be too aggressive. In those cases, the qualities that could make them an effective ground cover – fast solid coverage – create a greater problem. The spread of these invasive ground covers is difficult or impossible to stop, even with boundaries. They can show up unwanted far from the original site. Unfortunately, after this is discovered, you have a major battle on your hands to rid yourself of the nuisance. These ground covers easily escape from your home to your neighborhood, community, and beyond.

Invasive plants are usually not native. When they overrun parks, natural areas, waterways, and agricultural lands, they are known specifically as **non-native or alien invasive plants**. See HG 88, “Invasive Plant Control in Maryland” for a list of invasive plants and how they can be controlled.

The following ground covers *are not* recommended:

- *Ajuga reptans* (Bugleweed) – Seeds jump boundaries and keep going.
- *Aegopodium podagraria* (Bishops weed) – Roots spread invasively. Even tiny root portions resprout.
- *Euonymus fortunei* (Wintercreeper) – Berries spread afar.
- *Glechoma hederacea* (Creeping Charlie/ground ivy/ Gill-over-the-ground) – A common lawn weed, this can be just as invasive in parks.
- *Houttuynia cordata* ‘Chameleon’ – Has an invasive root system.

- *Ranunculus ficaria* (Lesser celandine) – A spring ephemeral growing in dense patches, it smothers native plants. Tubers and bulblets often wash downstream.

The following are recommended with reservations:

- *Hedera helix* (English ivy) - Coarse evergreen vine can be planted where vigilantly and perpetually controlled. Do not plant adjacent to natural areas or allow it to

climb trees where it produces berries that birds spread.

- *Mentha* spp. (mints) – Best to enjoy herbal mints in pots.
- *Vinca minor* (Periwinkle) – Flowering evergreen that can be used in shade/part shade where vigilantly controlled. Do not plant adjacent to natural areas. It will spread into it.

Plant Criteria Table* (See key below)

Name of ground cover	Height /spread	Plant Type	Foliage	Light	Soil	Bloom
<i>Arabis caucasica</i> Rock cress	I /M	Herbaceous	Deciduous	Sun -LS	All	Sp
<i>Arctostaphylos uva-ursi</i> Bearberry	S /S - L	Shrub	Evergreen	Sun-LS	Acid	Sp
<i>Arenaria verna</i> Scotch moss, Sandwort	S /S - M	Herbaceous	Evergreen	Sun -MS	All	Sp
<i>Armeria maritima</i> Maritime thrift	S /S - M	Herbaceous	Evergreen	Sun -LS	All	Sp, Su
<i>Artemisia stelleriana</i> Dusty miller, Wormwood 'Silver brocade'	I –T /M	Herbaceous	Deciduous	Sun -LS	All Su	
<i>Asarum canadense</i> Canadian wild ginger	S /S - M	Herbaceous	Deciduous	LS –DS	Acid	Sp
<i>A. europaeum</i> European wild ginger	S /S – M	Herbaceous	Evergreen	LS –DS	Acid	Sp
<i>A. shuttleworthii</i> Mottled wild ginger	I /S	Herbaceous	Semi- evergreen	LS –DS	Acid	Sp
<i>A. splendens</i> Chinese wild ginger	S /S - M	Herbaceous	Evergreen	LS –DS	Acid	Sp
<i>A. virginicum</i>	I /S – M	Herbaceous	Evergreen	LS –DS	Acid	Sp
<i>Astilbe chinensis</i> var. 'Pumila'	I /S – M	Herbaceous	Deciduous	Sun - MS	Acid	Su
<i>Athyrium filix-femina</i> Lady fern	I – T /S - L	Fern	Deciduous	LS –DS	All	—
<i>Calluna vulgaris</i> Heather	I –T / M – L	Shrub	Evergreen	Sun-LS	Acid	Su, F
<i>Campanula garganica</i> Bellflower	S-I / S – M	Herbaceous	Deciduous	Sun- LS	All	Su, F
<i>Carex glauca</i>	S / S – L	Sedge	Evergreen	LS –MS	Acid	Su

Key*

Height	S = short, up to 6"	I = intermediate, 6" to 2 feet	T = tall, over 2 feet
Spread	S = small area	M = medium area	L = large area
Light	Sun = full sun: Direct sunlight at least six hours a day. LS = light shade: Partially filtered sun most of the time. An open canopy of branches or patches of bright sunlight that move as the sun traverses the sky and breezes disturb the foliage. MS = moderate shade: A closed canopy which allows little direct sunlight. DS = dense or full shade: Sunlight must pass through many layers of leaves (e.g. beech or maple canopies) or shade is cast on the north side of a structure.		
Soil	Acid = acid	N = neutral	Alk = alkaline
Bloom season:	W = winter	Sp = spring	Su = summer
			F = fall

Name of ground cover	Height /spread	Plant Type	Foliage	Light	Soil	Bloom
<i>Cerastium tomentosum</i> Snow-in-summer	I / S – M	Herbaceous	Evergreen	Sun	All	Sp
<i>Ceratostigma plumbaginoides</i> Plumbago, Leadwort	I / S - L	Herbaceous	Semi- evergreen	Sun-MS	Acid	Su, F
<i>Chrysogonum virginianum</i> Green and gold	S / S	Herbaceous	Semi- evergreen	LS –MS	Acid – N	Sp
<i>Convallaria majalis</i> Lily of the valley	I / S – L	Herbaceous	Deciduous	LS-DS	All	Sp
<i>Cornus canadensis</i> Bunchberry, Dwarf cornel	S-I / S - M	Herbaceous	Deciduous	LS –MS	Acid	Sp, Su
<i>Cotoneaster dammeri</i> Bearberry cotoneaster	I / M – L	Shrub	Semi- evergreen	Sun-LS	Acid-N	Sp, Su
<i>C. horizontalis</i> var. ‘Purpusilla’	I-T /M	Shrub	Deciduous	Sun-LS	Acid-N	S
<i>C. salicifolius</i> Willowleaf cotoneaster	I/M - L	Shrub	Evergreen	Sun-LS	Acid-N	Sp, Su
<i>Dicentra exima</i> Bleeding heart	I /S -M	Herbaceous	Deciduous	LS- MS	Acid	Sp, Su, F
<i>Delosperma Cooperi</i> Cooper’s hardy ice plant	I/ M-L	Succulent	Evergreen	Sun	All	S
<i>Dryopteris cristata</i> Crested wood fern	I / M –L	Fern	Evergreen	LS-DS	Acid	—
<i>Epimedium grandiflorum</i> Barrenwort	I / S – L	Herbaceous	Deciduous	LS- MS	Acid	Sp
<i>Festuca ovina</i> var. <i>glauca</i> Blue fescue	I/ S - L	Grass	Evergreen	Sun	Acid-N	Su
<i>Forsythia x intermedia</i> Dwarf Arnold forsythia	T /M - L	Shrub	Deciduous	Sun-MS	All	Sp
<i>Galax urceolata</i> Colt’s foot, Beetleweed	I / S	Herbaceous	Evergreen	LS-DS	Acid-N	Sp, Su
<i>Galium odoratum</i> Sweet woodruff	I /S – M	Herbaceous	Semi- evergreen	MS-DS	Acid	Sp
<i>Geranium x cantabrigiense</i> ‘Biokovo’	I /S - M	Herbaceous	Semi- evergreen	Sun -LS	All	Sp, Su
G. ‘Ann Folkard’	I /S – M	Herbaceous	Deciduous	Sun- LS	All	Su, F
<i>G. sanguineum</i> Bloody cranesbill	I /S – M	Herbaceous	Deciduous	Sun -LS	All	Sp, Su
<i>Helleborus niger</i> Christmas rose	I /S – M	Herbaceous	Evergreen	LS - MS	All	W
<i>H. orientalis</i> Lenten rose	I /S – M	Herbaceous	Evergreen	LS - MS	All	W, Sp
<i>Heuchera sanguinea</i> Coral bells	I / S	Herbaceous	Evergreen	Sun -LS	All	Sp, Su, F
<i>Hosta lancifolia</i>	I / M	Herbaceous	Deciduous	Sun-DS	Acid	Su , F
<i>H. plantaginea</i>	I / S - M	Herbaceous	Deciduous	Sun-DS	Acid	Su, F
<i>H. yingeri</i>	I / M –L	Herbaceous	Deciduous	Sun–DS	Acid	Su
<i>Hypericum calycinum</i> St. John’s wort	I / M – L	Sub-shrub	Semi- evergreen	Sun -LS	Acid	Su, F

Name of ground cover	Height /spread	Plant Type	Foliage	Light	Soil	Bloom
<i>Iberis semipervirens</i> Candytuft	I / S - M	Herbaceous	Evergreen	Sun- LS	All	Sp
<i>Iris cristata</i>	S / S - M	Herbaceous	Deciduous	Sun -MS	All	Sp
<i>I. tectorum</i>	I / S - M	Herbaceous	Deciduous	Sun -MS	All	Sp
<i>Jasminum nudiflorum</i> Winter jasmine	T / L	Shrub	Deciduous	Sun -MS	Acid	Sp
<i>Juniperus conferta</i> Shore juniper	I / M - L	Shrub	Evergreen	Sun	All	—
<i>J. horizontalis</i> ‘Admirabilis’	S – I / M - L	Shrub	Evergreen	Sun	Acid-N	—
<i>J. horizontalis</i> ‘Bar Harbor’	S – I / M - L	Shrub	Evergreen	Sun	Acid-N	—
<i>J. horizontalis</i> ‘Wiltonii’ Blue rug juniper	S / M - L	Shrub	Evergreen	Sun	Acid-N	—
<i>J. horizontalis</i> ‘Andorra’ Andorra juniper	I / M - L	Shrub	Evergreen	Sun	Acid-N	—
<i>J. horizontalis</i> ‘Plumosa’	I / M - L	Shrub	Evergreen	Sun	Acid-N	—
<i>J. squamata</i> ‘Blue Carpet’	I / M	Shrub	Evergreen	Sun	Acid-N	—
<i>J. squamata</i> ‘Blue Star’	I / M	Shrub	Evergreen	Sun	Acid-N	—
<i>Lamiastrum galeobdolon</i> var. <i>variegatum</i> Yellow archangel	I / M – L	Herbaceous	Evergreen	Sun –MS	All	Sp, Su
<i>Lamium maculatum</i> Spotted dead nettle	S – I / S	Herbaceous	Evergreen	Sun –MS	All	Sp, Su
<i>Liriope muscari</i> Lily turf	I / S – L	Grass-like	Evergreen	Sun –MS	Acid	Su
<i>L. spicata</i> Creeping lily turf	I / S – L	Grass-like	Evergreen	Sun -MS	Acid-N	Su
<i>Mahonia repens</i> Creeping mahonia	S – I / S – M	Shrub	Semi- evergreen	Sun -LS	All	Sp, Su
<i>Mitchella repens</i> Partridge berry	S / S – M	Perennial	Evergreen	LS - MS	Acid	Su
<i>Ophiopogon japonius</i> Mondo grass	I / S - L	Grass-like	Evergreen	Sun-MS	All	Su
<i>Pachysandra terminalis</i> Japanese pachysandra, Japanese spurge	I / M - L	Herbaceous	Evergreen	LS-DS	Acid – N	Sp
<i>Phlox divaricata</i> Woodland phlox	I / S – M	Herbaceous	Deciduous	Sun -MS	Acid – N	Sp, Su
<i>P. subulata</i> Moss phlox	S / S – M	Herbaceous	Evergreen	Sun	N-Alk	Sp
<i>Polystichum acrostichoides</i> Christmas fern	T / S – L	Fern	Evergreen	LS-DS	All	—
<i>Potentilla tridentata</i> Three-toothed cinquefoil	S - I / S – L	Herbaceous	Semi- evergreen	Sun -LS	Acid	Su
<i>Pulmonaria saccharata</i> Lungwort	I / M	Herbaceous	Evergreen	MS-DS	All	Sp

Name of ground cover	Height /spread	Plant Type	Foliage	Light	Soil	Bloom
<i>Rosa wichuraiana</i> Memorial rose	I / M – L	Shrub	Semi- evergreen	Sun -LS	Acid – N	Sp, Su
<i>Sagina subulata</i> Irish moss, Corsican pearlwort	S / S	Herbaceous	Evergreen	Sun -LS	Acid – N	Su
<i>Sarcococca hookeriana</i> var. <i>humilis</i> Dwarf Himalayan sweet box	I /M -L	Shrub	Evergreen	LS-DS	Acid	W, Sp
<i>Sedum ellacombianum</i> Yellow stonecrop	I /M - L	Succulent	Deciduous	Sun	All	Su
<i>S. kamtschaticum</i> Kamchatka stonecrop	S /S - M	Succulent	Semi- evergreen	Sun	All	Su
<i>S. spectabile</i> Showy stonecrop	I /M - L	Succulent	Deciduous	Sun	All	F
<i>S. ternatum</i>	S /S	Succulent	Semi- evergreen	LS-MS	All	Sp, Su
<i>Teucrium chamaedrys</i> Germander	I /S - M	Herbaceous	Semi- evergreen	Sun-LS	All	Su, F
<i>Thymus caespitosa</i> Thyme	S /S	Herbaceous	Evergreen	Sun-LS	All	Su
<i>T. pseudolanuginosus</i> Woolly thyme	S/M	Herbaceous	Semi- evergreen	Sun-LS	All	Su
<i>T. serpyllum</i> Creeping thyme, Mother of thyme	S /S	Herbaceous	Evergreen	Sun -LS	All	Su
<i>T. vulgaris</i> Garden thyme, Common thyme	I /S – M	Herbaceous	Evergreen	Sun-LS	All	Sp, Su
<i>Tiarella cordifolia</i> Allegheny foamflower, False mitrewort	S/ S – M	Herbaceous	Evergreen	LS-DS	Acid	Sp
<i>Vaccinium angustifolium</i> Low bush blueberry	I / M	Shrub	Deciduous	Sun-LS	Acid	Sp
<i>Verbena canadensis</i> , ‘Homestead purple’	S /S – M	Herbaceous	Deciduous	Sun	Acid – N	Sp, Su, F
<i>Vinca minor</i> Periwinkle	S /S – L	Herbaceous	Evergreen	Sun – DS	All	Sp

Gallery of Ground Covers

<i>Arabis caucasica</i> Rock cress	Herbaceous, deciduous. Height 6 to 12 inches; spread 18 inches. Tufted, trailing habit. White bloom early spring. Stabilizes soil. Variety of horticultural selections. Sun to light shade. Requires good drainage. Soil acid to alkaline. Drought tolerant. Growth rate: moderate.
<i>Arctostaphylos uva-ursi</i> Bearberry	Shrub, evergreen. Height 1 to 4 inches; spread indefinite. Prostrate, low creeper. Dark green leaves turn bronzy in fall and winter. White to pinkish flowers in spring. Full sun to light shade. Controls erosion on slopes. Acid soil. Salt tolerant. Drought tolerant. Growth rate: slow to moderate. NATIVE
<i>Arenaria verna</i> Scotch moss, sandwort	Herbaceous evergreen. Height about 2 inches. Narrow moss-like light green leaves. Tiny flowers on erect stems in midspring. Sun to moderate shade. Prefers sandy moderately acid soil. Shallow roots require supplemental watering in summer. Other species available. Growth rate: moderate to fast.
<i>Armeria maritima</i> Maritime thrift	Herbaceous evergreen. Height 4 to 6 inches; spread 8-12 inches. Dark green foliage. Midspring stalks topped by pink to whitish flower heads through early summer. Sun to light shade. Prefers sandy loam. Drought tolerant. Salt tolerant. Good choice for coastal areas. Variety of horticultural selections. Growth rate: slow.
<i>Artemisia stellarana</i> Dusty miller, wormwood, var. 'Silver brocade'	Herbaceous, deciduous. Height 2 to 2 ½ feet; spread to 3 feet. Lacy silvery-white foliage. Full sun to light shade. Acid to alkaline soil. Relatively drought tolerant. Salt tolerant. Growth rate: moderate. NATIVE
<i>Asarum canadense</i> Canadian wild ginger	Herbaceous, deciduous. Height 4 to 6 inches; spread indefinite. Leaves 5 inches across, kidney-shaped, gray green. Light to dense shade. Rich acid soil. Growth rate: slow. NATIVE
<i>Asarum europaeum</i> European wild ginger	Herbaceous, evergreen. Height 5 inches; spread to 14 inches. Glossy rich green leaves 3 inches wide. Light to dense shade. Rich acid soil. Growth rate: slow
<i>Asarum shuttleworth</i> Mottled wild ginger	Herbaceous, semi-evergreen. Height 8 inches; spread to 14 inches. Two to 3 inch wide mottled gray leaves. Light to dense shade. Rich acid soil. Growth rate: slow. NATIVE
<i>Asarum splendens</i> Chinese wild ginger	Herbaceous, evergreen. Height 6 inches; spreads by rhizomes. Arrow-shaped dark green gray/silver mottled leaves. Light to moderate shade. Humusy, rich moist acid soil. Poor drought tolerance. Growth rate: slow.
<i>Asarum virginicum</i>	Herbaceous, evergreen. Height 6 to 8 inches. Leaves 4 inches, mottled with silver gray. Light to dense shade. Rich acid soil. Growth rate: slow. NATIVE
<i>Astilbe chinensis</i> var. 'Pumila'	Herbaceous, deciduous. Height and spread 8 to 12 inches. Mid to late summer spiked clusters of tiny rose-colored flowers on 15 to 20 inch stalks. Sun to moderate shade. Moist rich acidic soil. Shallow roots sensitive to drought. Growth rate: slow.
<i>Athyrium filix-femina</i> Lady fern	Fern, deciduous. Clumps 1 ½ to 3 ft tall by 1 ½ to 3 ft wide. Light shade to dense shade. Organic acidic soil best but tolerates a wide range of soil. Best in moist soil. Growth rate: moderate.
<i>Calluna vulgaris</i> Heather	Shrub, evergreen. Height 18-36 inch mound; spread 3 to 4 feet. Pink to purple flowers on upright clusters from mid to late summer. Sun to light shade. Sandy acid soil preferred. Good drainage critical. Variety of horticultural selections. Growth rate: slow to moderate.
<i>Campanula garganica</i> Bellflower	Herbaceous, deciduous. Height 6 to 8 inches; spread 1 foot. Trailing habit. Flowers early summer to fall. Sun to light shade. Acid to alkaline soil. Several varieties available. Growth rate: fast.
<i>Carex glauca</i>	Sedge, evergreen. Height 6 inches. Bluish grassy foliage. Spreads by creeping rhizomes. Tiny flower spikes early to mid summer. Tolerates foot traffic. Light to moderate shade. Acid soil. Controls erosion. Growth rate: slow to moderate. NATIVE
<i>Cerastium tomentosum</i> Snow-in-summer	Herbaceous, evergreen. Height 6 to 12 inches, width 12 inches. Mat of gray-green leaves covered with whitish hairs. Profusion of white five-petaled flowers mid to late spring. No foot traffic. Full sun. Sandy loamy soil. Good drainage essential to prevent fungal disease. Drought tolerant. Controls erosion. Growth rate: moderate to fast.
<i>Ceratostigma plumbaginoides</i> Plumbago, leadwort	Herbaceous, semi-evergreen. Height 6 to 10 inches. Spread can be aggressive. Blue flowers in summer. Foliage turns bronze after frosts. Full sun to light shade. Acid soil best. Good drainage. Controls erosion. Growth rate: moderate to fast.

<i>Chrysogonum virginianum</i> Green and gold	Herbaceous, semi-evergreen. Height 2 to 4 inches (4 to 8 inches in bloom); sprawls to 1 ½ feet. Golden star-shaped flowers spring to fall. Tolerates foot traffic. Sun to moderate shade. Rich, moderately acid soil. Marginal drought tolerance. Several horticultural selections. Growth rate: moderate. NATIVE
<i>Convallaria majalis</i> Lily of the valley	Herbaceous, deciduous. Height 6 to 8 inches tall with indefinite spread. Grass-like foliage. Bell-shaped flowers on erect stalks in spring. Light to dense shade. Rich moderately acid soil best. Controls erosion. Growth rate: moderate.
<i>Cornus canadensis</i> Bunchberry, dwarf cornel	Herbaceous, deciduous. Height 4 to 9 inches; spreads by rhizomes. Smallest species of dogwood with similar leaf shape and flowers. Best under deciduous trees. Light to moderate shade spring and fall. Rich acid soil. Moisture tolerant. Growth rate: slow. NATIVE
<i>Cotoneaster dammeri</i> Bearberry cotoneaster	Shrub, semi-evergreen. Height 12-18 inches; over 6 feet. Fragrant white flowers in the spring. Leaves turn bronzy in fall. Sun to light shade. Fertile neutral to acid soil. Good drainage important. Drought tolerant. Controls erosion. Variety of horticultural selections. , Moderately aggressive. Growth rate: fast
<i>Cotoneaster horizontalis</i> ‘Purpusilla’	Shrub, deciduous. Height 1 to 2.5 feet; spread 5 to 8 feet. Coarse, prostrate branches. Tiny lustrous dark green leaves turn reddish-purple in fall. Pink flowers early summer. Scarlet berries late summer to fall. Full sun to part shade. Drought tolerant. Fertile neutral to acidic soil. Requires good drainage. Growth rate: slow.
<i>Cotoneaster salicifolius</i> Willowleaf cotoneaster	Shrub, evergreen. Height 15 inches; spread 6 feet. Horizontal green foliage turns bronze fall through winter. Clusters of white fragrant flowers spring to early summer. No foot traffic. Sun to light shade. Drought tolerant. Neutral to acidic soil. Growth rate: fast.
<i>Dicentra exima</i> Fringed bleeding heart	Herbaceous, deciduous. Height 12 to 18 inches; spread 20 inches. Pink heart-shaped flowers, spring to early fall. Light to moderate shade. Best in rich acidic soil. Many cultivars available. Growth rate: slow. NATIVE
<i>Dryopteris cristata</i> Crested wood fern	Fern, evergreen. Height 1 to 3 feet. Upright fertile fronds are not evergreen; arching sterile fronds remain evergreen. Sun to light shade. Wooded areas as well as moist wetlands. Acid soil. Growth rate: slow. NATIVE
<i>Epimedium grandiflorum</i> Barrenwort	Herbaceous, deciduous. Height 9 to 12 inches; spread over 1 to 1 ½ feet. Spring bloom. Light to moderate shade. Slightly acid soil. Needs good drainage. Grows better with periodic summer watering. A variety of species and cultivars. Growth rate: slow to moderate.
<i>Festuca ovina</i> var. <i>glauca</i> Blue fescue	Grass, evergreen. Height 8 to 10 inches; spread 12 to 18 inches. Blue-green clumps. Tolerates foot traffic. Sun to light shade, but full sun is best. Drought tolerant. Acid to neutral soil. Many horticultural selections. Growth rate: slow.
<i>Forsythia x intermedia</i> Dwarf Arnold forsythia	Shrub, deciduous. Height 2 to 4 feet; spread 6 to 7 feet. Compact low spreading mound. Pale greenish flowers early to mid spring. Space at 3 foot intervals. Full sun to moderate shade. Erosion control. Acid soil best. Adapts well to any well drained soil. Growth rate: moderate.
<i>Galax urceolata</i> Colt’s foot, beetleweed	Herbaceous, evergreen. Height 6-12 inches; spread indefinite by short rhizomes. White flower spikes late spring to mid summer. Edging for woodland paths and rock gardens. Light to dense shade. Organic slightly acid soil. Not drought tolerant. Growth rate: moderate. NATIVE
<i>Galium odoratum</i> Sweet woodruff	Herbaceous, semi-evergreen. Height 6 to 12 inches; spread indefinitely by creeping roots. White flowers May to June. Part shade to full shade. Does not tolerate afternoon sun. Rich acidic soil. May go dormant under dry conditions. Compatible with black walnut. Growth rate: moderate.
<i>Geranium x cantabrigiense</i> ‘Biokovo’	Herbaceous, semi-evergreen. Height 6-12 inches; spread 12-20 inches. Blooms white to pink, late April to mid-July. More lax habit than the parent hybrid. Sun to part sun; no bloom in shade. Rich soil, acid to slightly alkaline. Growth rate: moderate.
<i>Geranium</i> ‘Ann Folkurd’	Herbaceous, deciduous. Height 18 inches; width 24 inches. Robust spreader but does not root as it spreads. Bloom magenta with black center mid summer to fall. Sun to light shade. Acid to slightly alkaline soil. Growth rate: moderate to fast.
<i>Geranium sanguineum</i> Bloody cranesbill	Herbaceous, deciduous. Height to 12 inches; spread 18 inches or more. Blooms reddish-purple mid-spring to late summer. Sun to light shade. Acid to slightly alkaline soil. Many horticultural selections. Growth rate: moderate to fast.

<i>Helleborus niger</i> Christmas rose	Herbaceous, evergreen. Height 12 to 18 inches; spread 18 inches. Clumps. Niger refers to the black roots. All parts of the plant are poisonous and may cause dermatitis in some cases. Whitish flowers with a tinge of pink in late winter. Light to moderate shade. Rich well-drained soil, acid to slightly alkaline. Growth rate: slow.
<i>Helleborus orientalis</i> Lenten rose	Herbaceous, evergreen. Height 18 inches; spread 18 inches. Easier to grow than <i>Helleborus niger</i> . Large reddish or purplish blooms February to March. Light to moderate shade. Rich well drained acid to alkaline soil. Growth rate: slow.
<i>Heuchera sanguinea</i> Coral bells	Herbaceous, evergreen. Height 12 to 18 inches; spread 2-3 feet. Clumps. Delicate red to pink bell-shaped flowers atop airy stalks from mid-spring through early fall. Sun to light shade. Slightly acid soil best. Fairly drought tolerant. Growth rate: slow. NATIVE
<i>Hosta lancifolia</i>	Herbaceous, deciduous. Height 1 ½ feet to 2 feet; spread to 18 inches. Narrow-leafed. Flowers pale lavender late summer to early fall on 2 foot stems. Light to dense shade; sun in cool climate. Not drought tolerant. Acid soil. Growth rate: moderate.
<i>Hosta plantaginea</i>	Herbaceous, deciduous. Height 10 inches; spread to 3 feet. Fragrant white flowers late summer to early fall. Sun to dense shade. Well drained acidic soil. Growth rate: moderate.
<i>Hosta yingeri</i>	Herbaceous, deciduous. Height 18 inches when in bloom; spread 12 inches to 5 feet, depending on the horticultural selection. Light to dense shade. Acid soil with good drainage. Growth rate: moderate.
<i>Hypericum calycinum</i> St. John's wort	Shrub-like, semi-evergreen. Height 12 to 18 inches; spread indefinite by underground stems. Leaves dark green above to bluish green below, purplish in fall. Yellow flowers early summer to early fall. Sun to partial shade. Controls erosion. Fertile, acid, well-drained soil. Growth rate: moderate.
<i>Iberis sempervirens</i> Candytuft	Shrub-like, evergreen. Height 12 inches; spread 3 to 4 feet. Mounds of shiny green leaves. White flowers early spring or late summer. Sun to light shade. Fair drought tolerance. Various soils, but good drainage essential. Growth rate: slow.
<i>Iris cristata</i>	Herbaceous, deciduous. Height 6-8 inches; spread indefinite. Forms dense mat. Foliage sword-shaped. Lilac flowers in spring. Full sun to moderate shade. Moist fertile soil. Horticultural selections. Growth rate: slow to moderate. NATIVE
<i>Iris tectorum</i>	Herbaceous, deciduous. Height 12 to 18 inches; spread indefinite. Late springtime lilac to bluish purple. Full sun to moderate shade. Moist fertile soil. Growth rate: slow to moderate.
<i>Jasminum nudiflorum</i> Winter jasmine	Shrub, deciduous. Height 2 to 3 feet; spread 4 to 7 feet. Small yellow trumpet-shaped flowers early spring before leaves appear. Green stems in winter. Sun to moderate shade. Moderately drought tolerant. Well-drained acid soil. Growth rate: relatively fast.
<i>Juniperus conferta</i> Shore juniper	Shrub, evergreen. Height 1 to 1.5 feet; spread over 6 feet. A dense horizontal wide-spreading habit. Needle-like leaves. Full sun. Well drained, neutral to acid soil. Drought tolerant. Controls erosion. Salt tolerant. Growth rate: slow to moderate. NATIVE
<i>Juniperus horizontalis</i> 'Admirabilis'	Shrub, evergreen. Full sun. Resistant to cedar apple rust. Well-drained, acid to neutral soil. Drought tolerant. Controls erosion. Growth rate: slow. NATIVE
<i>Juniperus horizontalis</i> 'Bar Harbor'	Shrub, evergreen. Height 10 inches; spread to over 6 feet. Awl-shaped needles; steel blue turning purplish in fall. Full sun. Well-drained acid to neutral soil. Drought tolerant. Salt tolerant. Controls erosion. Growth rate: slow. NATIVE
<i>Juniperus horizontalis</i> 'Wiltonii' Blue rug juniper	Shrub, evergreen. Height 3 to 6 inches; spread about 8 feet. Low trailing silvery-blue foliage that hugs the ground. Hint of purple in winter. Full sun. Well drained acid to neutral soil. Erosion control. Drought tolerant. Growth rate: slow to moderate. NATIVE
<i>Juniperus horizontalis</i> 'Andorra' Andorra juniper	Shrub, evergreen. Height 1 to 2 feet; spread 4 to 6 feet. Coarse, scalelike, grayish-green foliage becomes purplish in winter. Full sun. Drought tolerant. Controls erosion. Growth rate: slow to moderate. NATIVE
<i>Juniperus horizontalis</i> 'Plumosa'	Shrub, evergreen. Height 1 to 2 feet; spread to 6 feet. Dense, coarse gray-green foliage becomes purplish in winter. Drought tolerant. Well-drained acid to neutral soil. Full sun. Growth rate: slow to moderate. NATIVE
<i>Juniperus squamata</i> 'Blue Carpet'	Shrub, evergreen. Height 8 to 12 inches; spread 4 to 5 feet. Deep silvery blue foliage. Full sun. Drought tolerant. Acid to neutral soil. Controls erosion. Growth rate: slow to moderate.
<i>J. squamata</i> 'Blue Star'	Shrub, evergreen. Height not over 12 inches; spread 4 to 5 feet. Deep silvery blue foliage. Full sun. Drought tolerant. Acid to neutral soil. Controls erosion. Growth rate: slow to moderate.

<i>Lamiastrum galeobdolon</i> var. <i>variegatum</i> Yellow archangel	Herbaceous, evergreen. Height 1 foot; spread indefinite. Trailing habit sends prostrate shoots that root at intervals. Can be very aggressive and hard to control. Silver and green foliage. Yellow flowers late spring to early summer. Light to moderate shade. Tolerates most soils, prefers well drained acidic soil. Dislikes dry soil. Drought tolerant. Controls erosion. Growth rate: fast.
<i>Lamium maculatum</i> Spotted dead nettle	Herbaceous, evergreen. Height 6 to 8 inches; spread 12-16 inches. Forms clumps. Lavender flowers, spring to summer. Sun to moderate shade. Rich soil best. Not adapted to heat, drought, or high humidity. Growth rate: moderate.
<i>Liriope muscari</i> Lily turf	Grass-like, evergreen. Height 18 to 24 inches; spread 8 to 12 inches wide. Clumps of long narrow lily-like leaves. Spikes of purple or white flowers mid to late summer. Full sun to moderate shade. Drought tolerant. Well drained-acid soil. Growth rate: slow.
<i>Liriope spicata</i> Creeping lily turf	Grass-like, evergreen. Height 8-12 inches; spread 6-12 inches. Long narrow leaves, dark green till fall, then bronzy green until spring. Violet to white flowers in spikey clusters mid to late summer. Full sun to moderate shade. Drought tolerant. Well drained non-alkaline soil. Growth rate: moderate.
<i>Mahonia repens</i> Creeping mahonia	Shrub, semi-evergreen. Height 1 to 2 feet; spread 4 to 5 feet. Creeping and broad-leafed, spreads by underground stems. Fragrant yellow flowers late spring to early summer. Full sun to part shade. Prefers high organic acid soil. Growth rate: slow. NATIVE
<i>Mitchella repens</i> Partridge berry	Herbaceous, evergreen. Height 1 to 2 inches; spreads indefinitely. Trailing vine-like small-leaved foliage. Tolerates limited foot traffic. Summer flowers become red berries. Light to moderate shade. Rich moist sandy soil; not greatly tolerant of drought. Growth rate: slow. NATIVE
<i>Ophiopogon japonicus</i> Mondo grass	Grass-like, evergreen. Height 6 to 18 inches depending on the species. Spikes of white or lilac flowers in summer. Tolerates foot traffic. Sun to moderate shade. Acid to alkaline soil. Not very drought tolerant. Growth rate: slow to moderate.
<i>Pachysandra terminalis</i> Japanese pachysandra, Japanese spurge	Herbaceous, evergreen. Height 6 to 12 inches. Spreads indefinitely. White flowers at terminal ends pleasantly fragrant in spring. Light to dense shade. Acid to neutral soil. Erosion control. Growth rate: slow to moderate. Can be INVASIVE: Do not plant adjacent to natural areas.
<i>Phlox divaricata</i> Woodland phlox	Herbaceous, deciduous. Height 8 to 12 inches; spread 18 to 36 inches. Stolons form mat of dark green leaves. Showy violet to blue lavender flowers, mid spring to early summer. Attracts hummingbirds and butterflies. Full sun to light shade. Acid to neutral soil. A variety of cultivars available. Growth rate: moderate. NATIVE
<i>Phlox subulata</i> Moss phlox	Herbaceous, evergreen. Height 4 to 6 inches; spread to 2 feet. Mat-forming. Spring display of small red, pink, or violet flowers. Tolerates foot traffic. Attracts humming birds and butterflies. Sun. Acid to neutral soil. Growth rate: moderate. NATIVE
<i>Polystichum acrostichoides</i> Christmas fern	Fern, evergreen. Height 1 ½ to 2 ½ feet; crowns 2 to 3 feet wide. May spread seed if happy. General cover for woody slope. Light to dense shade. Neutral soil best. Tolerates moderate periods of drought but prefers a cool moist location. Growth rate: slow. NATIVE
<i>Potentilla tridentata</i> Three-toothed cinquefoil	Herbaceous, semi-evergreen. Height 2 to 12 inches. Forms dense mat. Flowers white through summer. Foliage turns scarlet in fall. Tolerates foot traffic. Sun to light shade. Well drained acidic soil. Relatively drought tolerant. Growth rate: slow. NATIVE
<i>Pulmonaria saccharata</i> Lungwort	Herbaceous, evergreen. Height 9 to 12 inches; spread to 2 feet. Showy spotted or variegated foliage in clumps. Early spring pink to red flower buds open to blue or violet flowers. Moderate to dense shade. Rich moist acid to alkaline soil. Variety of horticultural selections. Growth rate: slow.
<i>Rosa wichuraiana</i> Memorial rose	Shrub, semi-evergreen. Height 12 to 18 inches; spread 6 to 15 feet. Spring to mid-summer fragrant white flowers. Sun to light shade. Salt tolerant. Rich acidic to neutral soil. Controls erosion well. Growth rate: moderate to fast.
<i>Sagina subulata</i> Irish moss, Corsican pearlwort	Herbaceous, evergreen. Height 2 to 4 inches; spreads indefinitely. Mat-forming. Tolerates foot traffic. Sun to light shade. Gritty not-too-dry, acid to neutral soils. Growth rate: moderate.

<i>Sarcococca hookeriana</i> var <i>humilis</i> Dwarf Himalayan sweet box	Shrub, evergreen. Height 1 to 2 feet; spread to over 6 feet. Woody shrublet spreads by underground network of roots and stolons. Choice plant with dark green lustrous foliage. Expensive. Late winter-early spring fragrant flowers. No foot traffic. Light to deep shade. Tolerant of air pollution. Prevents erosion. Well drained rich acidic soil. Growth rate: slow.
<i>Sedum ellacombianum</i> Yellow stonecrop	Succulent, deciduous. Height 6 to 10 inches. Light green mound forming. Bright yellow blooms in early summer. Sun. Sandy soil. Drought tolerant. Growth rate: fast.
<i>Sedum kamtschaticum</i> Kamchatka stonecrop	Succulent, semi-evergreen. Height 3 to 4 inches; spreads indefinitely. Narrow dark green foliage on compact stems. Cold tolerant. Orange yellow flowers in June fruit turns to red weeks later. Sun. Sandy soil. Drought tolerant. Cold tolerant. Growth rate: fast.
<i>Sedum spectabile</i> Showy stonecrop	Succulent, deciduous. Height and spread 12 to 18 inches. Upright clumps of two inch long leaves. Brilliant fall blooms. Colors vary with horticultural selection. Full sun with either afternoon or morning shade. Sandy, well drained soil. Drought tolerant. Growth rate: moderate.
<i>Sedum ternatum</i>	Succulent, semi-evergreen. Height 2 to 3 inches; indefinite spread. Mat forming. Flowering stems erect reaching 8 inches. White flowers late spring to summer. Light to moderate shade. Sandy acidic soil. Drought tolerant. Growth rate: moderate. NATIVE
<i>Teucrium chamaedrys</i> Germander	Sub-shrub, semi-evergreen. Height 8 to 10 inches; spread 1.5 to 2 feet. Early summer to fall purplish flowers in upright compact spikes. Sun to light shade. Any well drained soil. Moderately drought tolerant. Growth rate: slow to moderate.
<i>Thymus caespitosa</i> Thyme	Herbaceous, evergreen. Height ¾ to 2 ½ inches; spread over 1 foot. Dense mat tolerates foot traffic. Purplish pink to white flowers in summer. Sun to light shade. Well drained acidic to neutral soil. Drought tolerant. Growth rate: moderate.
<i>Thymus pseudolanuginosus</i> Woolly thyme	Herbaceous, evergreen. Low mat forming dense carpet; spreads more than 12 inches. Leaves long, dense, gray-haired. Flowers pale pink in summer. Sun to light shade. Prefers acidic, well drained soil. Tolerates foot traffic. Growth rate: moderate.
<i>Thymus serpyllum</i> Creeping thyme, Mother of thyme	Herbaceous, evergreen. Height 1 to 3 inches. Sprawling mint-scented leaves. Tolerates foot traffic. Late spring to early summer lilac to purple bloom. Sun to light shade. Drought tolerant. Well drained acidic to neutral soil. Growth habit: moderate.
<i>Thymus vulgaris</i> Garden thyme, Common thyme	Herbaceous, evergreen. Height 6 to 10 inches. Subshrub habit. Late spring pale whitish lilac flowers. Sun to light shade. Drought tolerant. Well drained acidic to neutral soil. Growth rate: moderate.
<i>Tiarella cordifolia</i> Allegheny foamflower, False mitrewort	Herbaceous, evergreen. Height 4 inches. Basal leaves oval to heart-shaped, may be mottled, become bronzy in fall. Tiny white flowers atop erect stems in midspring. No foot traffic. Light to dense shade. Moist well drained rich acidic soil. Not drought tolerant. Growth rate: moderate. NATIVE
<i>Vaccinium augustifolium</i> Low bush blueberry	Shrub, deciduous. Height 6 to 24 inches; spread to more than 4 ft. Woody, somewhat open, shrubby plant. Good combined with open-canopied trees. White flowers in spring give rise to small sweet blueberries. Sun to light shade. Soil: organic, acidic with good drainage. Growth rate: slow. NATIVE
<i>Verbena canadensis</i> ‘Homestead purple’	Herbaceous, deciduous. Height 4 to 6 inches; spread over 2 feet. Showy bloom is heavy late spring till fall. Sun. Well drained slightly acid to neutral soil. Drought tolerant. Growth rate: moderate. NATIVE
<i>Vinca minor</i> Periwinkle	Herbaceous, evergreen. Height 4 to 6 inches; spreads indefinitely. Dark green leaves exclude weeds. Flowers in spring lilac-blue, white, purple. Tolerates foot traffic. Sun to moderate shade. Moist acid to alkaline soil. Erosion control. Growth rate: moderate. Can be INVASIVE: Do not plant adjacent to natural areas.

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